

5

Science Standard  
5.3.b.



# Changing States: Water, Natural Systems, and Human Communities

## California Education and the Environment Initiative

Approved by the California State Board of Education, 2010

### The Education and the Environment Curriculum is a cooperative endeavor of the following entities:

California Environmental Protection Agency  
California Natural Resources Agency  
Office of the Secretary of Education  
California State Board of Education  
California Department of Education  
California Integrated Waste Management Board

### Key Leadership for the Education and Environment Initiative:

**Linda Adams**, Secretary, California Environmental Protection Agency  
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**Andrea Lewis**, Assistant Secretary for Education and Quality Programs, California Environmental Protection Agency  
**Mark Leary**, Executive Director, California Integrated Waste Management Board  
**Mindy Fox**, Director, Office of Education and the Environment, California Integrated Waste Management Board

### Key Partners:

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### Office of Education and the Environment

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## **Lesson 1**    Evaporation, the Water Cycle, and Human Communities

- 1    Water Cycle ..... 2
- 2    Getting Salt From the Water ..... 3

## **Lesson 2**    Factors Affecting the Evaporation Rate

None required for this lesson.

## **Lesson 3**    How the Water Cycle Affects Natural Systems

- 3    Open and Closed Stomata ..... 4
- 4    Transpiration ..... 5
- 5    Amazon Rainforest ..... 6

## **Lesson 4**    The Cooling Effects of Evaporation

- 6    States of Water ..... 7
- 7    Roof Garden ..... 8

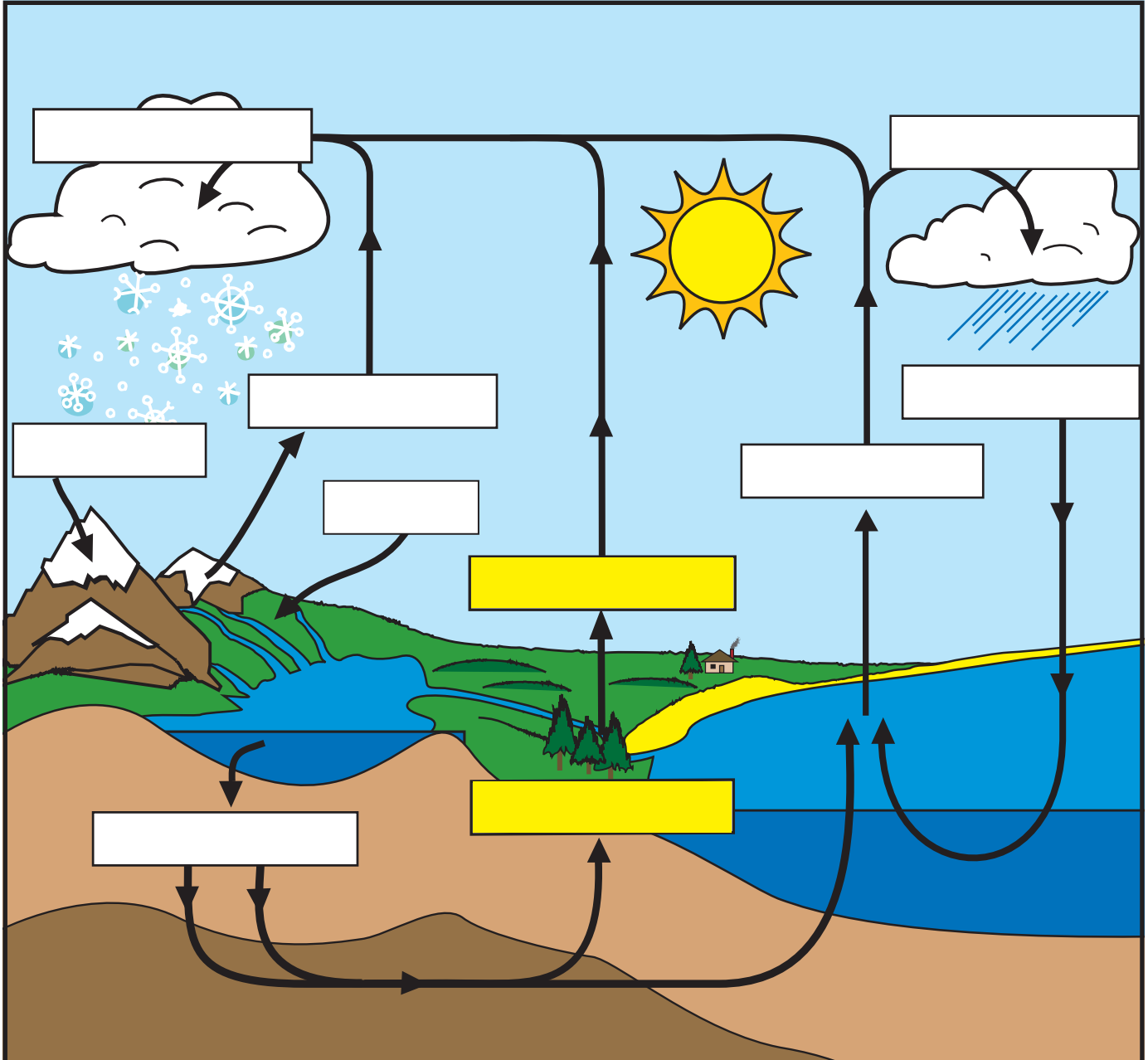
## **Lesson 5**    The Role of Condensation in Natural Systems

- 8    Dew ..... 9

## **Lesson 6**    Freezing in Natural Systems and Human Communities

- 9    Frost ..... 10
- 10    Climate Zones of California ..... 11
- 11    Plants After a Freeze ..... 12
- 12    Sierra Nevada Snowpack ..... 13

## VA #1 Water Cycle





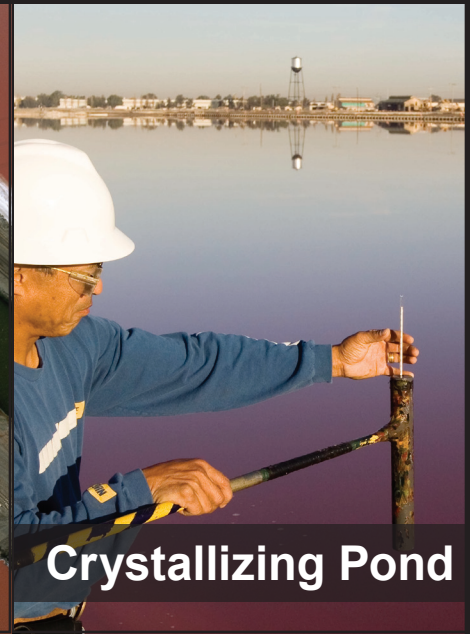
## VA #2 Getting Salt From the Water



**Salt Ponds**



**Red Salt Ponds**



**Crystallizing Pond**



**Harvesting Salt**



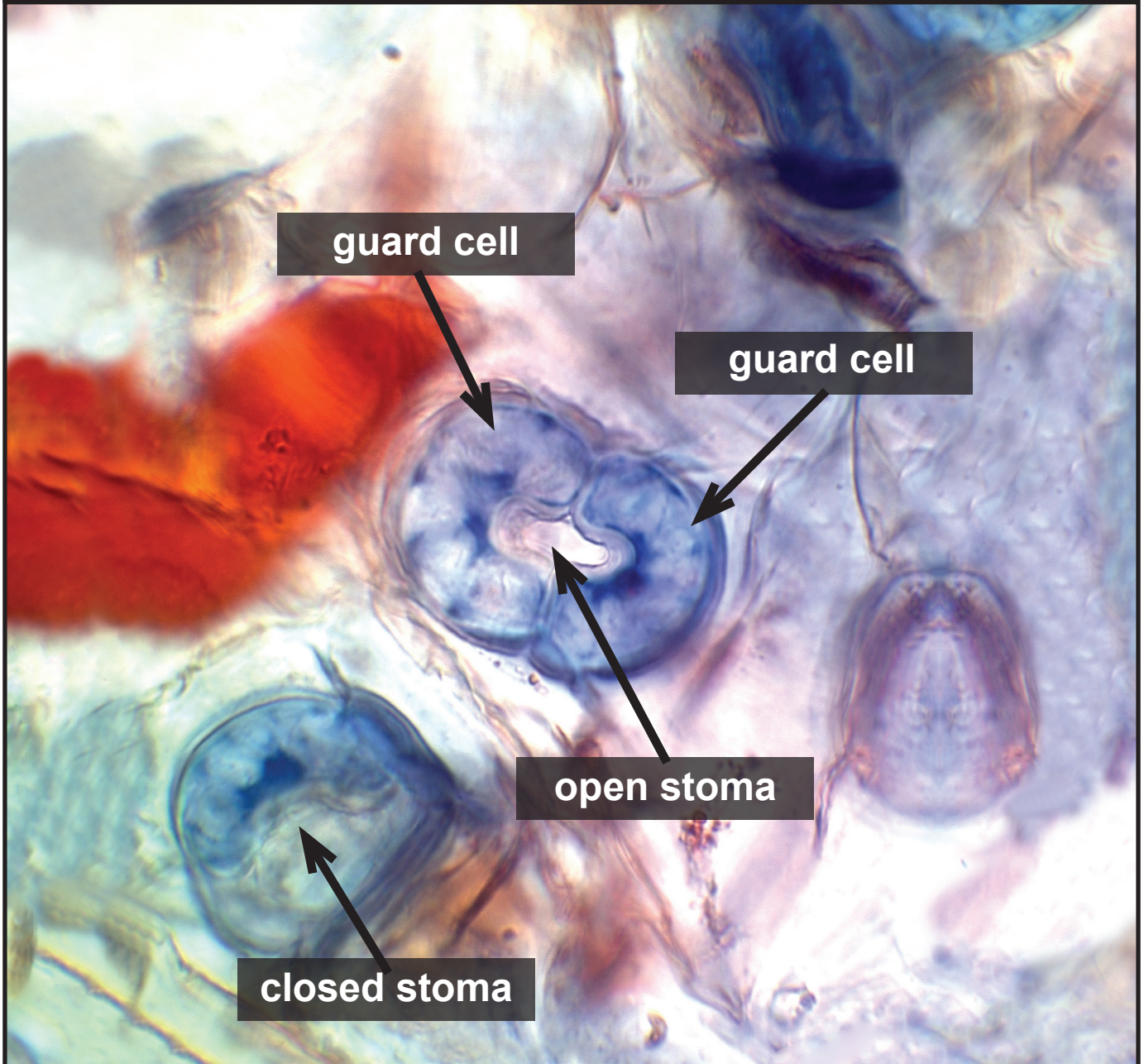
**Preparing Salt**



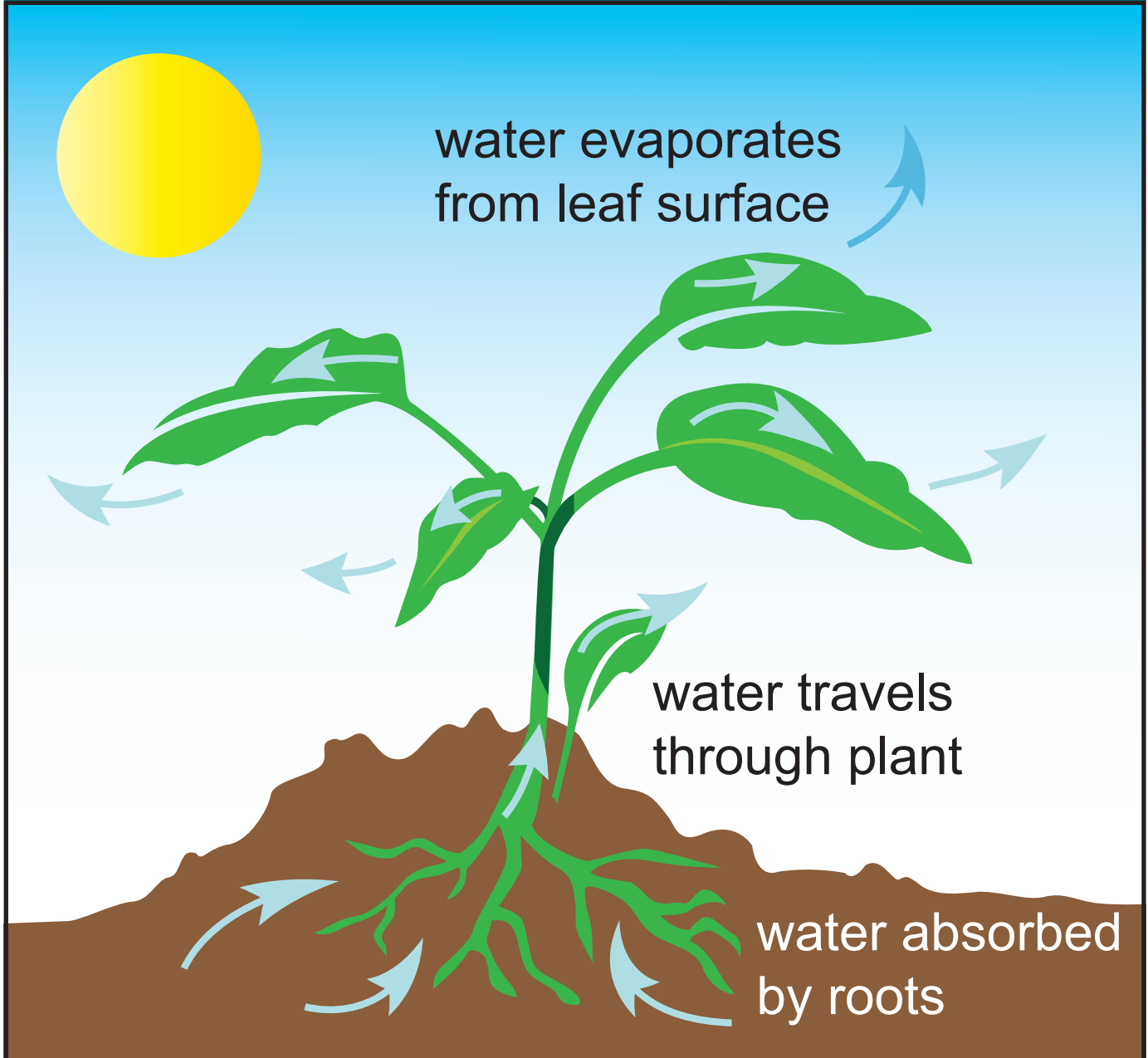
**Packaged Salt**



### VA #3 Open and Closed Stomata



## VA #4 Transpiration





## VA #5 Amazon Rainforest

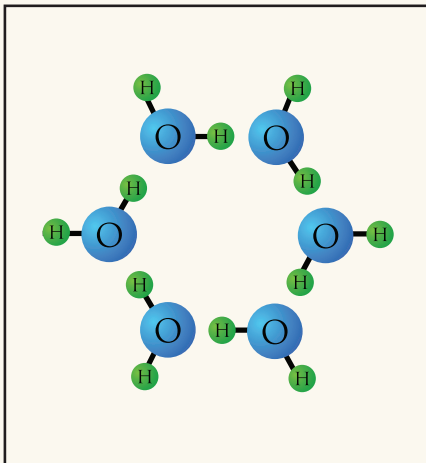


**VA #6 States of Water**

Taking heat from the surroundings

Solid (ice) becomes liquid water

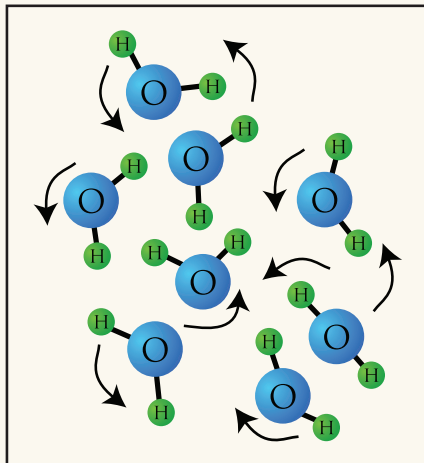
**ice**



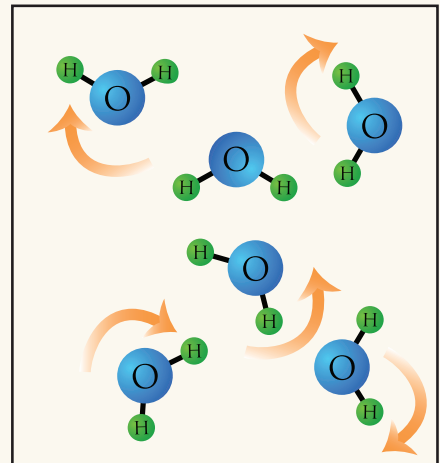
Taking heat from the surroundings

Liquid water becomes water vapor

**water**



**water vapor**



Liquid water becomes solid (ice)

Giving off heat to the surroundings

Water vapor becomes liquid water

Giving off heat to the surroundings



## VA #7 Roof Garden



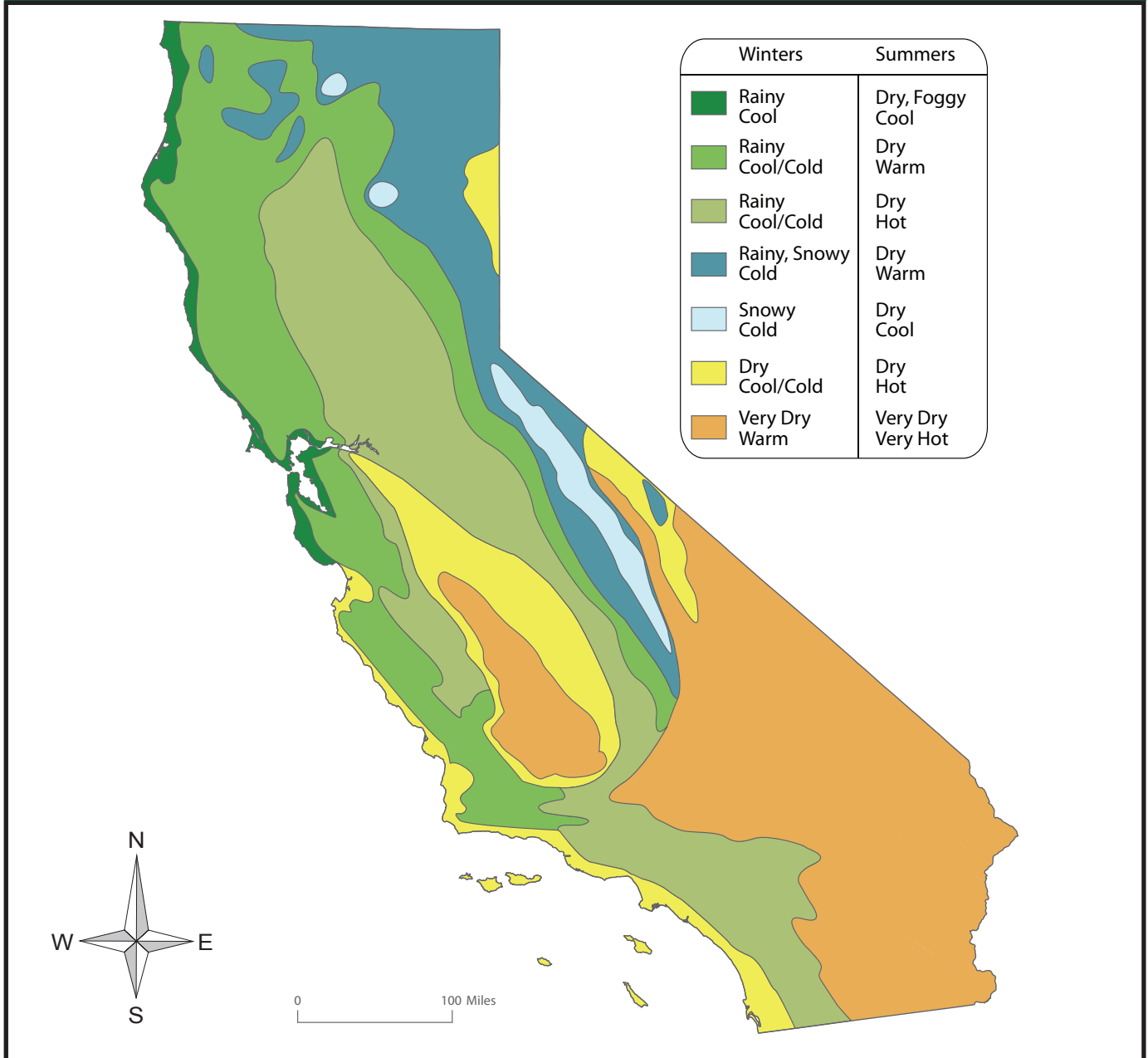


**VA #8 Dew**



**VA #9 Frost**

## VA #10 Climate Zones of California





## VA #11 Plants After a Freeze





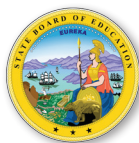
## VA #12 Sierra Nevada Snowpack











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